

REMARKS

Claims 1, 2, 4-14, 19-24 and 35-38 are in this application and are presented for consideration. By this amendment, Applicant has amended claims 1, 2, 4, 35, 36 and 37.

Claims 1, 2, 4, 5, 19, 23 and 24 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Giacometti (US 5,709,829) in view of any one of Muth (WO 03/004229 A1 referencing US 2004/0209041 as an English-language equivalent), Schulz (US 5,913,997) or Cruise (US 5,874,159).

The present invention relates to a method to produce a perforated web material. The method includes preheating the web material prior to contact with the first roller and the second roller. The preheated web material is fed to the entrance of the nip, which is defined by the first roller and the second roller, without contacting the second roller. Preheating the web material prior to contacting one or more rollers advantageously reduces the time required by the web material to be in contact with the perforation roller so that correct and accurate perforation of all of the web material is obtained. This advantageously allows feeding of the web material at a high speed, which significantly reduces the time it takes to perforate the web material. This drastically reduces the overall manufacturing costs involved with producing the perforated web material since it takes less time to perforate the web material. Further, the heating of the web material prior to contact with one or more rollers allows the web material to be more easily perforated. This significantly reduces the mechanical stress on the web material. As the web material reaches the nip preheated, the pressure and percentage of slippage between the rollers is drastically reduced. The reduction in pressure reduces the

compression stresses and bending stresses to which the tips or protuberances provided on the roller are subjected. This advantageously allows the protuberances to be produced of a greater height, which allows the thickness of the finished product to be increased. The prior art as a whole fails to disclose such features and such increased manufacturing efficiency advantages.

As noted in the Office Action, Giacometti fails to teach or suggest the combination of a web that is preheated prior to contacting two rollers for perforating the preheated web as claimed. Giacometti merely discloses a method for perforating a web wherein a web enters a nip defined by two rollers that rotate at different speeds wherein one of the rollers has protuberances for producing the holes in the web. As such, the prior art as a whole does not establish a prima facie case of obviousness as Giacometti does not provide any teaching or suggestion that would direct a person of ordinary skill in the art toward the advantages of perforating a preheated web material as featured in the present invention.

The Office Action relies on the teachings of Muth, Schulz and Cruise to suggest that it would be obvious to preheat a web material prior to contacting two rollers that perforate the preheated web material as featured in the present invention. However, a person of ordinary skill in the art would not be directed toward the teachings of Muth, Schulz and Cruise. Muth discloses that it is critical that the rollers rotate at the same rotational speed. Schulz and Cruise also disclose that it is essential that the rollers at the same rotational speed. This is in direct conflict with the teachings of Giacometti, which discloses that the rollers rotate at different speeds. The different speed of the rollers of the present invention is necessary to provide excellent perforation characteristics. A perforation made with rollers that rotate at different

speeds provides a stress on the web that is greater than the stress occurring with the perforation made with rollers that rotate at the same speed. A person of ordinary skill in the art would not be directed toward the teachings of Muth, Schulz and Cruise in view of Giacometti since Muth, Schulz and Cruise do not address the problem of optimizing the quality of a web of material with high stress during perforation. Even assuming a person of ordinary skill in the art would be directed toward the teachings of Muth, Schulz and Cruise, the references as a whole do not teach or suggest feeding a preheated web material to a position adjacent to an entrance of a nip without the preheated web material contacting a second roller as claimed. Muth clearly directs a person of ordinary skill in the art toward an apparatus wherein the nonwoven is advanced on to an opposing roller before entering the gap formed by a perforating roller and the opposing roller. This means that the nonwoven of Muth touches a roll before entering the nip. This disadvantageously provokes an unwanted variation of the temperature of the web. In fact, the references fail to teach or suggest the combination of a first roller having protuberances that do not penetrate a surface of the second roller as claimed. Muth clearly discloses that the needles of one roller penetrate the surface of the other roller. As such, the prior art as a whole fails to establish a prima facie case of obviousness as the prior art as a whole does not provide any teaching or suggestion that would direct a person of ordinary skill in the art toward the features claimed.

Schulz et al. and Cruise et al. do not teach or suggest the combination of preheating a web material prior to the web material contacting a first roller and a second roller as featured in the claimed combination. Schulz et al. and Cruise et al. only disclose heating a web material

prior to bonding of webs and embossing of webs. The references as a whole fail to provide any suggestion of using the teachings of Schulz et al. and Cruise et al. to separate the heating station from a bonding station and combine it with the devices of Muth and Giacometti since the references do not direct a person of ordinary skill in the art toward the benefits of preheating the web material in connection with perforation treatments. Schulz et al. and Cruise et al. are only concerned with heating a web material to bond the web material together and to emboss the webs, but the references as a whole do not provide any teaching or suggestion for the advantages of preheating a web prior to perforation. Bonding and embossing are very different from perforation, and the stress on the web is lower in embossing and bonding operations. As such, Schulz et al. and Cruise et al. fail to provide any teaching or suggestion of heating a web material prior to perforating the web material as claimed. As such, the prior art as a whole takes a completely different approach and fails to establish a prima facie case of obviousness as the prior art as a whole does not teach or suggest each and every feature of the claimed combination. Accordingly, Applicant respectfully requests that the Examiner favorably consider claim 1 as now presented and all claims that depend thereon.

Claims 6 and 14 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Giacometti in view of any one of Muth, Schulz or Cruise, and further in view of Dettmer et al. (WO 99/25911 reference US 6,359,211 as an English-language equivalent).

As previously discussed above, Giacometti and Muth only disclose heating a roller to heat a web material while Schulz et al. and Cruise et al. disclose heating a web material prior to bonding the web material together, but the references as a whole do not teach or suggest the

combination of preheating a web material prior to the web material contacting a first roller or a second roller as featured in the present invention. Dettmer et al. also does not provide any teaching or suggestion for preheating a web material prior to the web material contacting one or more rollers as claimed. Similar to Giacometti and Muth, Dettmer et al. only discloses two rollers that define a nip through which a web material is fed with the embossing roller being heated. However, the web material fails to be heated prior to contact with the embossing roller as claimed. As such, the prior art as a whole takes a completely different approach and fails to teach or suggest each and every feature of the claimed combination. Accordingly, all claims define over the prior art as a whole.

Claims 7-9, 20-22 and 35-37 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Giacometti in view of any one of Muth, Schulz or Cruise, and further in view of Dettmer, and further in view of Pike (US 5,382,400).

As discussed above, the Giacometti, Muth, Schulz and Cruise do not teach or suggest the combination of preheating a web material prior to contact with a first roller and a second roller wherein the preheated web material is fed to a position adjacent to a nip defined by the first roller and the second roller without contacting the second roller as claimed. A person of ordinary skill in the art would not be directed toward the teachings of Dettmer et al. and Pike in view of Giacometti. Similar to Muth, Schulz and Cruise, Dettmer et al. and Pike do not provide any teaching or suggestion for preheating a web prior to contact with a first roller and a second roller that perforate the preheated web as claimed. Dettmer et al. and Pike are concerned with embossing and/or bonding web material. Bonding and/or embossing of a web

is very different from perforation of a web as claimed, and the stress on the web is lower in embossing and bonding operations. As such, Dettmer et al. and Pike fail to direct a person of ordinary skill in the art toward a web material that is preheated prior to being feed to two rollers for perforation as claimed. In fact, Dettmer et al. takes a completely different approach than that of the present invention by disclosing that the web is heated by one of the rollers and the web is not preheated as claimed. As such, the prior art as a whole takes a completely different approach and fails to establish a prima facie case of obviousness as the prior art as a whole does not teach or suggest each and every feature of the claimed combination. Accordingly, Applicant respectfully requests that the Examiner favorably consider claims 35 and 36 as now presented and all claims that respectively depend thereon.

Applicant has added new independent claim 38. New independent claim 38 provides the specific dimensions of the protuberances. The present invention advantageously allows the protuberances to be of increased height compared with conventional techniques so that the compression of the web material between the protuberances is reduced. This advantageously allows the web material to maintain a greater volume and in particular a greater thickness. The prior art as a whole fails to teach or suggest such advantages. Accordingly, Applicant respectfully requests that the Examiner favorably consider new independent claim 38.

Favorable consideration on the merits is requested.

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